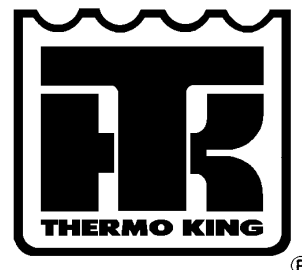




Service Bulletin



SUBJECT: MP4000 Alarm Descriptions

BULLETIN: C 100

DATE: June 19, 2013

ALARM LIST

Where it is possible the alarm number is kept the same as for MP-3000. MP-3000 holds alarm number from 0 to 127. New alarms not matching the MP-3000 scheme is allocated above 127.

MP-4000 Alarm List (Software version 2.4.3 or later)			
No	Alarm text	In use in normal run	In use during test
0	SUP AIR SENSOR OPEN CIRCUIT.	N	T
1	SUP AIR SENSOR SHORT CIRCUIT.	N	T
2	RET AIR SENSOR OPEN CIRCUIT.	N	T
3	RET AIR SENSOR SHORT CIRCUIT.	N	T
4	EVA COIL SENSOR OPEN CIRCUIT.	N	T
5	EVA COIL SENSOR SHORT CIRCUIT.	N	T
6	COMP CURRENT TOO HIGH.		T
7	COMP CURRENT TOO LOW		T
10	HEATER CURRENT TOO HIGH.		T
11	HEATER CURRENT TOO LOW.		T
12	EVA HIGH CURRENT TOO HIGH.		T
13	EVA HIGH CURRENT TOO LOW.		T
14	EVA LOW CURRENT TOO HIGH.		T
15	EVA LOW CURRENT TOO LOW.		T
16	CON CURRENT TOO HIGH.		T
17	CON CURRENT TOO LOW.		T
18	POWER SUPPLY PHASE ERROR.	N	T
19	TEMP TOO FAR FROM SETPOINT.	N	
20	DEFROST TOO LONG.	N	T
22	CAPACITY TEST 1 ERROR.		T
23	CAPACITY TEST 2 ERROR.		T
26	VAPOR. INJECTION ERROR		T

MP-4000 Alarm List (Software version 2.4.3 or later)			
No	Alarm text	In use in normal run	In use during test
31	LOW PRESS CUTOUT	N	T
32	CON AIR SENSOR OPEN CIRCUIT.	N	T
33	CON AIR SENSOR SHORT CIRCUIT.	N	T
34	AMB AIR SENSOR OPEN CIRCUIT.	N	T
35	AMB AIR SENSOR SHORT CIRCUIT.	N	T
43	RET AIR TEMP TOO HIGH.	N	T
44	RET AIR TEMP TOO LOW	N	
51	VOLTAGE TOO LOW.	N	T
52	PROBE ERROR.	N	T
53	HIGH PRESSURE SWITCH OFF.		T
54	HIGH PRESSURE SWITCH ON.		T
56	COMPRESSOR TEMP TOO HIGH.	N	
57	FAE DEVICE ERROR	N	T
58	PHASE SENSOR ERROR		T
59	DELTA CUR ERROR.	N	T
60	HUMIDITY SENSOR ERROR.		T
65	CO2 TOO HIGH.	N	
66	CO2 TOO LOW.	N	
68	GAS ANALYSER ERROR.	N	T
69	GAS ANALYSER CALIBRATION.	N	T
70	O2_SENSOR ERROR		T
71	CO2 SENSOR ERROR		T
97	COMP SENSOR OPEN CIRCUIT.	N	T
98	COMP SENSOR SHORT CIRCUIT.	N	T
119	DIGITAL VALVE ERROR.		T
120	SUCTION PRESSURE SENSOR ERROR.	N	T
121	DISCHARGE PRESSURE SENSOR ERROR.	N	T
122	O2 SENSOR CALIBRATION ERROR		T
123	DATALOGGER BATTERY ERROR	N	T
124	COLD TREATMENT RESTART	N	
127	ALARM_GENERAL_UNIT_ERROR	N	T
128	SUPPLY AIR TEMPERATURE PROBE ERROR	N	T
129	RETURN AIR TEMPERATURE PROBE ERROR	N	T
130	EVAPORATOR COIL TEMPERATURE PROBE ERROR	N	T
131	AMB - COND TEMPERATURE PROBE ERROR	N	T
132	POWER MODULE SENSOR ERROR	N	T
133	POWER MODULE NETWORK ERROR	N	T
134	CONTROLLER ERROR	N	T
135	POWER MODULE ERROR	N	T

MP-4000 Alarm List (Software version 2.4.3 or later)			
No	Alarm text	In use in normal run	In use during test
136	TRANSDUCER CIRCUIT ERROR	N	T
137	SENSOR SYSTEM OVERLOAD	N	T
138	AVL SENSOR ERROR	N	T
139	INTERNAL FILE HANDLING ERROR	N	T
140	EVAPORATOR SECTION TOO HOT	N	T

ALARM DESCRIPTIONS

Each alarm is described with a description of the alarm and the recommended corrective action. Some alarms are special related to specific customer requests and may not be active for standard settings.

If the specific alarm depends on special customer options it is noticed in the description setting.

Alarm #0000 Supply Air Temperature Sensor Open Circuit	
Description	Corrective Action
- When the sensor circuit resistance is above 1300Ω. - Indicates: - Open circuit. - Defective or wrong sensor. - Defective wiring. - Defective controller.	- Check for damaged sensor wires. - Check for sensor connections at controller. - The sensor is a pt1000 – 2 wire sensor, connected to the MP-4000 at connector J3 pin 1 and 2. CM-4000 upper left connector J3, 17 pin wide, pin number 1 is the right pin, seen at the backside of the controller. - The 2 sensor wires can be switched without affecting the measurement. - Disconnect the sensor, use an Ohm (Ω) measuring device, measure the electrical resistance between the two sensor wires. The sensor can't be examined without disconnecting it. The electrical resistance towards chassis must be above meg ohm (MΩ) range. - The sensor is a pt1000 – positive temperature coefficient, which means that the electrical resistance of the sensor increases with temperature. The sensor is defined to be 1000Ω@ 0°C. Normal condition measuring with disconnected sensor is 960Ω@-10°C, 1000Ω@0°C, 1039Ω@+10°C, 1058Ω@+15°C, 1078Ω@+20°C. The valid measuring limit for this pt1000 sensor is - 100°C(602Ω) +75°C(approx 1300Ω).

Alarm #0001
Supply Air Temperature Sensor Short Circuit

Description	Corrective Action
- When the sensor circuit resistance is below 602Ω. - Indicates: - Short circuit. - Defective or wrong sensor. - Defective wiring. - Defective controller.	- Check for damaged sensor wires. - Check for sensor connections at controller. - The sensor is a pt1000 – 2 wire sensor, connected to the MP-4000 at connector J3 pin 1 and 2. CM-4000 upper left connector J3, 17 pin wide, pin number 1 is the right pin, seen at the backside of the controller. - The 2 sensor wires can be switched without affecting the measurement. - Disconnect the sensor, use an Ohm (Ω) measuring device, measure the electrical resistance between the two sensor wires. The sensor can't be examined without disconnecting it. The electrical resistance towards chassis must be above meg ohm (MΩ) range. - The sensor is a pt1000 – positive temperature coefficient, which means that the electrical resistance of the sensor increases with temperature. The sensor is defined to be 1000Ω@ 0°C. Normal condition measuring with disconnected sensor is 960Ω@-10°C, 1000Ω@0°C, 1039Ω@+10°C, 1058Ω@+15°C, 1078Ω@+20°C. The valid measuring limit for this pt1000 sensor is - 100°C(602Ω) +75°C(approx 1300Ω).

Alarm #0002
Return Air Temperature Sensor Open Circuit

Description	Corrective Action
• When the sensor circuit resistance is above 1300Ω. • Indicates: - Open circuit. - Defective or wrong sensor. - Defective wiring. - Defective controller.	• Check for damaged sensor wires. • Check for sensor connections at controller. • The sensor is a pt1000 – 2 wire sensor, connected to the MP-4000 at connector J3 pin 3 and 4. CM-4000 upper left connector J3, 17 pin wide, pin number 1 is the right pin, seen at the backside of the controller. • The 2 sensor wires can be switched without affecting the measurement. • Disconnect the sensor, use an Ohm (Ω) measuring device, measure the electrical resistance between the two sensor wires. The sensor can't be examined without disconnecting it. The electrical resistance towards chassis must be above meg ohm (MΩ) range. • The sensor is a pt1000 – positive temperature coefficient, which means that the electrical resistance of the sensor increases with temperature. The sensor is defined to be 1000Ω@ 0°C. Normal condition measuring with disconnected sensor is 960Ω@-10°C, 1000Ω@0°C, 1039Ω@+10°C, 1058Ω@+15°C, 1078Ω@+20°C. The valid measuring limit for this pt1000 sensor is - 100°C(602Ω) +75°C(approx 1300Ω).

Alarm #0003
Return Air Temperature Sensor Short Circuit

Description	Corrective Action
• When the sensor circuit resistance is below 602Ω. • Indicates: - Short circuit. - Defective or wrong sensor. - Defective wiring. - Defective controller.	• Check for damaged sensor wires. • Check for sensor connections at controller. • The sensor is a pt1000 – 2 wire sensor, connected to the MP-4000 at connector J3 pin 3 and 4. CM-4000 upper left connector J3, 17 pin wide, pin number 1 is the right pin, seen at the backside of the controller. • The 2 sensor wires can be switched without affecting the measurement. • Disconnect the sensor, use an Ohm (Ω) measuring device, measure the electrical resistance between the two sensor wires. The sensor can't be examined without disconnecting it. The electrical resistance towards chassis must be above meg ohm (MΩ) range. • The sensor is a pt1000 – positive temperature coefficient, which means that the electrical resistance of the sensor increases with temperature. The sensor is defined to be 1000Ω@ 0°C. Normal condition measuring with disconnected sensor is 960Ω@-10°C, 1000Ω@0°C,1039Ω@+10°C, 1058Ω@+15°C, 1078Ω@+20°C. The valid measuring limit for this pt1000 sensor is - 100°C(602Ω) +75°C(approx 1300Ω).

Alarm #0004
Evaporator Coil Temperature Sensor Open Circuit

Description	Corrective Action
• When the sensor circuit resistance is above 1300Ω. • Indicates: - Open circuit. - Defective or wrong sensor. - Defective wiring. - Defective controller.	• Check for damaged sensor wires. • Check for sensor connections at controller. • The sensor is a pt1000 – 2 wire sensor, connected to the MP-4000 at connector J3 pin 5 and 6. CM-4000 upper left connector J3, 17 pin wide, pin number 1 is the right pin, seen at the backside of the controller. • The 2 sensor wires can be switched without affecting the measurement. • Disconnect the sensor, use an Ohm (Ω) measuring device, measure the electrical resistance between the two sensor wires. The sensor can't be examined without disconnecting it. The electrical resistance towards chassis must be above meg ohm (MΩ) range. • The sensor is a pt1000 – positive temperature coefficient, which means that the electrical resistance of the sensor increases with temperature. The sensor is defined to be 1000Ω@ 0°C. Normal condition measuring with disconnected sensor is 960Ω@-10°C, 1000Ω@0°C,1039Ω@+10°C, 1058Ω@+15°C, 1078Ω@+20°C. The valid measuring limit for this pt1000 sensor is - 100°C(602Ω) +75°C(approx 1300Ω).

Alarm #0005
Evaporator Coil Temperature Sensor Short Circuit

Description	Corrective Action
• When the sensor circuit resistance is below 602Ω. • Indicates: - Short circuit. - Defective or wrong sensor. - Defective wiring. - Defective controller.	• Check for damaged sensor wires. • Check for sensor connections at controller. • The sensor is a pt1000 – 2 wire sensor, connected to the MP-4000 at connector J3 pin 5 and 6. CM-4000 upper left connector J3, 17 pin wide, pin number 1 is the right pin, seen at the backside of the controller. • The 2 sensor wires can be switched without affecting the measurement. • Disconnect the sensor, use an Ohm (Ω) measuring device, measure the electrical resistance between the two sensor wires. The sensor can't be examined without disconnecting it. The electrical resistance towards chassis must be above meg ohm (MΩ) range. • The sensor is a pt1000 – positive temperature coefficient, which means that the electrical resistance of the sensor increases with temperature. The sensor is defined to be 1000Ω@ 0°C. Normal condition measuring with disconnected sensor is 960Ω@-10°C, 1000Ω@0°C,1039Ω@+10°C, 1058Ω@+15°C, 1078Ω@+20°C. The valid measuring limit for this pt1000 sensor is - 100°C(602Ω) +75°C(approx 1300Ω).

Alarm #0006 Compressor Current Too High

Description	Corrective Action
- Occurs during pretrip (PTI) or function test only. - During compressor test, if Compressor power consumption is 25% above expected current draw or compressor phase current level differs 33% or more. - If both alarm #6 and #7 is active this indicates too high phase difference. - Expected compressor current is a function of the surrounding conditions. - Indicates: - Defective Digital Control valve. - Defective compressor. - Defective volt or amp meter on power module. - Inaccurate condenser or evaporator temperature measurement. - Excessive condenser pressure due to air or wrong refrigerant in system, or refrigerant over charge.	- Check evaporator and condenser sensor temperatures for correct value ($\pm 5^{\circ}\text{C}$ [$\pm 9^{\circ}\text{F}$]) by viewing Data menu. - To determine the current draw measurement, enter Manual Function Test menu. Start and check current draw of the following components separately and together: compressor, compressor full loaded, condenser fan and evaporator fan (high or low). - Check power supply volts on all 3 phases.

Alarm #0007

Compressor Current Too Low

Description	Corrective Action
- Occurs during pretrip (PTI) or function test only. - During compressor test, if Compressor power consumption is 25% below expected current draw or compressor phase current level differs 33% or more. - If both alarm #6 and #7 is active this indicates too high phase difference. - Expected compressor current is a function of the surrounding conditions. - Indicates: - Defective or open high pressure cutout switch. - Defective or open low pressure cutout switch or transmitter if mounted. - Defective compressor relay. - Defective volt or amp meter on power module. - Low refrigerant charge. - Defective compressor. - Defective volt or amp meter on power module. - Inaccurate condenser or evaporator temperature measurement. - Defective or open compressor motor internal over temperature protection switch.	- Check evaporator, condenser sensor temperatures for correct value ($\pm 5^{\circ}\text{C}$ [$\pm 9^{\circ}\text{F}$]) by viewing Data menu. - To determine the current draw measurement, enter Manual Function Test menu. Start and check current draw of the following components separately and together: compressor, compressor full loaded, condenser fan and evaporator fan (high or low). - Check discharge and suction pressure gauge readings. - Check power supply volts on all 3 phases.

Alarm #0010 Heater Current Too High

Description	Corrective Action
- Occurs during pretrip (PTI) or function test only. - Heater power consumption is 25% above expected current draw or phase current level differs 33% or more. - If both alarm #10 and #11 is active this indicates too high phase difference. - Expected heater current is a function of the heating element resistance and the power supply voltage. - The Magnum+ may be equipped with extended heating capability. - Normal heating element 4kw@460VAC - above approximately 6,3Amp / 5,3Amp. - Extended heating element 6kw@460VAC - above approximately 9,4Amp / 8,1Amp. - Indicates: - Incorrect heaters or heater connections. - Defective heating elements. - Defective volt or amp meter on power module.	- Enter Manual Function Test and turn heaters on. Check current draw on each phase. Evaluate current draw in relation to expected values. - Enter configuration menu and check the heating element setting. - Check heater resistance. - The electrical resistance towards chassis must be above meg ohm (MΩ) range. - Normal heating element 4kw@460VAC - expects 5,0Amp@460VAC - expects 4,3Amp@400VAC - expected resistance 99Ω on each leg. - Extended heating element 6kw@460VAC - expects 7,5Amp@460VAC - expects 6,5Amp@400VAC - expected resistance 66Ω on each leg.

Alarm #0011 Heater Current Too Low

Description	Corrective Action
- Occurs during pretrip (PTI) or function test only. - Heater power consumption is 25% below expected current draw or phase current level differs 33% or more. - If both alarm #10 and #11 is active this indicates too high phase difference. - Expected heater current is a function of the heating element resistance and the power supply voltage. - The Magnum+ may be equipped with extended heating capability. - Normal heating element 4kw@460VAC - below approximately 3,7Amp / 3,2Amp. - Extended heating element 6kw@460VAC - below approximately 5,6Amp / 4,8Amp. - Indicates: - Incorrect heaters or heater connections. - Defective heating elements. - Defective volt or amp meter on power module.	- Enter Manual Function Test and turn heaters on. Check current draw on each phase. Evaluate current draw in relation to expected values. - Enter configuration menu and check the heating element setting. - Check heater resistance. - The electrical resistance towards chassis must be above meg ohm (MΩ) range. - Normal heating element 4kw@460VAC - expects 5,0Amp@460VAC - expects 4,3Amp@400VAC - expected resistance 99Ω on each leg. - Extended heating element 6kw@460VAC - expects 7,5Amp@460VAC - expects 6,5Amp@400VAC - expected resistance 66Ω on each leg.

Alarm #0012

Evaporator Fan High Speed Current Too High

Description	Corrective Action
- Occurs during pretrip (PTI) or function test only. - Fan power consumption is 33% above expected current draw or phase current level differs 33% or more. - If both alarm #12 and #13 is active this indicates too high phase difference. - Expected fan current is a function of the power line frequency and the supply voltage. - With 20' setting above approximately 3,4Amp@400VAC/50Hz 4,2Amp@460VAC/60Hz - With 40' setting above approximately 2,7Amp@400VAC/50Hz 3,4Amp@460VAC/60Hz - Indicates: - Defective or stuck evaporator fan motor. - Incorrect motor or motor connections. - Defective volt or amp meter on power module.	- Open evaporator door and make sure all fans rotate freely. - Enter Manual Function Test and start evaporator fans on high speed. Make sure all fans start on high speed. Check fan motor volts and amps. - With 20' setting expect 2,4Amp@400VAC/50Hz 3,1Amp@460VAC/60Hz - With 40' setting expect 1,8Amp@400VAC/50Hz 2,4Amp@460VAC/60Hz

Alarm #0013
Evaporator Fan High Speed Current Too Low

Description	Corrective Action
- Occurs during pretrip (PTI) or function test only. - Fan power consumption is 33% below expected current draw or phase current level differs 33% or more. - If both alarm #12 and #13 is active this indicates too high phase difference. - Expected fan current is a function of the power line frequency and the supply voltage. - With 20' setting below approximately 1,4Amp@400VAC/50Hz 2,0Amp@460VAC/60Hz - With 40' setting below approximately 0,9Amp@400VAC/50Hz 1,4Amp@460VAC/60Hz - Indicates: - Defective or open fan motor internal over. temperature protection switch. - Incorrect motor or motor connections. - Defective volt or amp meter on power module.	- Open evaporator door and make sure all fans rotate freely. - Enter Manual Function Test and start evaporator fans on high speed. Make sure all fans start on high speed. If a motor does not start and is very hot, wait 10 minutes for internal over temperature switch to close. - Enter Manual Function Test and start evaporator fans on high speed. Make sure all fans start on high speed. Check fan motor volts and amps. - With 20' setting expect 2,4Amp@400VAC/50Hz 3,1Amp@460VAC/60Hz - With 40' setting expect 1,8Amp@400VAC/50Hz 2,4Amp@460VAC/60Hz

Alarm #0014
Evaporator Fan Low Speed Current Too High

Description	Corrective Action
- Occurs during pretrip (PTI) or function test only. - Fan power consumption is 33% above expected current draw or phase current level differs 33% or more. - If both alarm #14 and #15 is active this indicates too high phase difference. - Expected fan current is a function of the power line frequency and the supply voltage. - With 20' setting above approximately 1,0Amp@400VAC/50Hz 1,2Amp@460VAC/60Hz - With 40' setting above approximately 1,0Amp@400VAC/50Hz 1,2Amp@460VAC/60Hz - Indicates: - Defective or stuck evaporator fan motor. - Incorrect motor or motor connections. - Defective volt or amp meter on power module.	- Open evaporator door and make sure all fans rotate freely. - Enter Manual Function Test and start evaporator fans on low speed. Make sure all fans start on low speed. Check fan motor volts and amps. - With 20' setting expect 0,8Amp@400VAC/50Hz 0,9Amp@460VAC/60Hz - With 40' setting expect 0,8Amp@400VAC/50Hz 0,9Amp@460VAC/60Hz

Alarm #0015
Evaporator Fan Low Speed Current Too Low

Description	Corrective Action
- Occurs during pretrip (PTI) or function test only. - Fan power consumption is 33% below expected current draw or phase current level differs 33% or more. - If both alarm #14 and #15 is active this indicates too high phase difference. - Expected fan current is a function of the power line frequency and the supply voltage. - With 20' setting below approximately 0,5Amp@400VAC/50Hz 0,6Amp@460VAC/60Hz - With 40' setting below approximately 0,5Amp@400VAC/50Hz 0,6Amp@460VAC/60Hz - Indicates: - Defective or open fan motor internal over temperature protection switch. - Incorrect motor or motor connections. - Defective volt or amp meter on power module.	- Open evaporator door and make sure all fans rotate freely. - Enter Manual Function Test and start evaporator fans on high speed. Make sure all fans start on high speed. If a motor does not start and is very hot, wait 10 minutes for internal over temperature switch to close. - Enter Manual Function Test and start evaporator fans on high speed. Make sure all fans start on high speed. Check fan motor volts and amps. - With 20' setting expect 0,8Amp@400VAC/50Hz 0,9Amp@460VAC/60Hz - With 40' setting expect 0,8Amp@400VAC/50Hz 0,9Amp@460VAC/60Hz

Alarm #0016
Condenser Fan Current Too High

Description	Corrective Action
- Occurs during pretrip (PTI) or function test only. - Fan power consumption is 33% above expected current draw or phase current level differs 33% or more. - If both alarm #16 and #17 is active this indicates too high phase difference. - Expected fan current is a function of the power line frequency and the supply voltage. - Above approximately 1,5Amp@400VAC/50Hz 1,8Amp@460VAC/60Hz - Indicates: - Defective or stuck condenser fan motor. - Incorrect motor or motor connections. - Defective volt or amp meter on power module.	- Enter Manual Function Test and start condenser fan. Make sure the fan starts. - Check fan motor volts and amps. - Expect 1,0Amp@400VAC/50Hz 1,2Amp@460VAC/60Hz

Alarm #0017 Condenser Fan Current Too Low

Description	Corrective Action
- Occurs during pretrip (PTI) or function test only. - Fan power consumption is 33% below expected current draw or phase current level differs 33% or more. - If both alarm #16 and #17 is active this indicates too high phase difference. - Expected fan current is a function of the power line frequency and the supply voltage. - Above approximately 0,5Amp@400VAC/50Hz 0,6Amp@460VAC/60Hz - Indicates: - Defective condenser fan motor relay. - Incorrect motor or motor connections. - Defective or open fan motor internal over temperature protection switch. - Defective volt or amp meter on power module.	- Enter Manual Function Test and start condenser fan. Make sure the fan starts. - Check fan motor volts and amps. - Expect 1,0Amp@400VAC/50Hz 1,2Amp@460VAC/60Hz

Alarm #0018 Power Supply Phase Error

Description	Corrective Action
Shutdown Alarm - The power module are not capable of detect the rotation direction. - Indicates: - Phase(s) missing at the power supply line. - Defective fuse at the power module. - Power module failure. - Heating element problem (used for current load to decide the rotation direction).	- Check fuses on the power module. - Check power line voltage on all 3 phases. - Use the tester to detect the problem. - Replace power module.

Alarm #0019 Temperature Too Far From Set Point	
Description	Corrective Action
- Occurs during Normal Run only. - After 75 minutes of operation, supply or return air temperature is not in-range and does not approach set point within preset pull-down rate. - Indicates: - Ice or frost on evaporator coil. - Low refrigerant charge. - Air exchange vent open too much. - Container air leakage (doors open).	- Use DATA menu to check supply and return air sensor temperatures. - Compare temperatures to evaluate unit cooling capacity and performance. - Temperature difference should be 4 °C to 6 °C (39 F - 43 F). - Open evaporator door. Inspect coil for ice or frost and initiate manual defrost if necessary. - Check refrigerant charge. NOTE: This alarm can be activated if the supply or return air temperature varies, even if the mean temperature does approach set point.

Alarm #0020 Defrost Duration Too Long	
Description	Corrective Action
- May occur during any defrost. - Heat signal has been on for too long. - Time limit is 90 minutes with supply voltage above 440VAC and 120 minutes below 440VAC. - Indicates: - Low power supply voltage. - Defective heater elements. - Evaporator fans running during defrost. - Evaporator sensor placed wrong.	- Initiate a manual defrost and check amperage draw and evaporator coil temperature. Evaluate defrost performance. - Open evaporator door and check location of evaporator coil sensor. NOTE: This alarm can be activated at low voltage and very low box temperature conditions, even under normal operating conditions.

Alarm #0022

Capacity Test 1 Error

Description	Corrective Action
- Occurs during pretrip (PTI) test only. - Difference between supply and return air temperature is too small with high speed evaporator fans (less than approximately 4.5 °C [8F]). - When the return air temperature does not reach -18C (0 F) within preset time. - Indicates: - Incorrect location of supply or return air sensor. - Air leakage at supply sensor cable. - Defective supply or return air sensor. - Interchanged sensor connections. - Incorrect evaporator fan rotation or high speed operation. - Incorrect refrigeration system operation. - Container/side panels defective, damaged or leaking. - Economizer circuit defective.	- Enter Manual Function Test and start evaporator fans on high speed and let operate fans for 5 minutes. Check supply, return and evaporator coil (defrost) sensor temperatures. Sensor readings should be the same (supply air may be 0.5 °C [1.0 F] higher due to fan motor heat). - Open evaporator door and inspect evaporator fan rotation. Make sure fans are rotating correctly on low and high speed. - Check the sensor connections. - Enter Manual Function Test menu. Start and check current draw of the following components separately and together: compressor, vapor on, condenser fan and evaporator fans (high). Check discharge and suction pressure readings. Also check the refrigerant charge. NOTE: This alarm can be activated in ambient temperatures below -10 °C (14 F), even under normal conditions.

Alarm #0023 Capacity Test 2 Error

Description	Corrective Action
- Occurs during pretrip (PTI) test only. - When the supply air temperature does not reach 0 °C (32 F) within preset time. - Indicates: - Incorrect location of supply air sensor. - Air leakage at supply sensor cable. - Defective supply air sensor. - Interchanged sensor connections. - Incorrect evaporator fan rotation or high speed operation. - Incorrect refrigeration system operation. - Container/side panels defective, damaged or leaking. - Air exchange vent open too much. - Low refrigerant charge. - Cooling circuit defective.	- Enter Manual Function Test and start evaporator fans on high speed and let operate fans for 5 minutes. Check supply, return and evaporator coil (defrost) sensor temperatures. Sensor readings should be the same (supply air may be 0.5 °C [1.0 F] higher due to fan motor heat). - Open evaporator door and inspect evaporator fan rotation. Make sure fans are rotating correctly on low and high speed. - Check the sensor connections. - Enter Manual Function Test menu. Start and check current draw of the following components separately and together: compressor, vapor on, condenser fan and evaporator fans (high). Check discharge and suction pressure readings. Also check the refrigerant charge.

Alarm #0026 Vapor Injection Error

Description	Corrective Action
- Occurs during pti, brief pti and function tests - Power consumption does not increase when activating economizer valve. - Current consumption not correct for valve position.	- Enter Manual Function Test and start compressor and evaporator fans on high speed, with digital valve off, operate vapor injection valve and observe current consumption change. An increase in current consumption is expected. - Check vapor injection valve function. - Evaluate economizer Tx valve operation. NOTE: This alarm can be activated in low ambient temperatures where condenser temperature may not be high.

Alarm #0031

Low Pressure Cut Out

Description	Corrective Action
• If Low pressure switch is mounted - The switch is OPEN. • If pressure transducer is mounted - The suction pressure has been measured below -0,27BarR and has not yet increased above +0,38BarR. • Indicates: - Low refrigerant charge. - Refrigeration system restriction at filter drier or expansion valve. - Defective low pressure cutout switch. - Defective low pressure transmitter.	• Check discharge and suction pressure gauge readings: - If refrigerant pressures are low, check for a restriction and leak check the refrigeration system. - If refrigerant pressures are high, check for a high refrigerant charge (see below). • Check for a restriction: - Check for frost on downstream side of the filter drier. - Check for high evaporator superheat using supply air sensor temperature readings in Data menu or a frost pattern on expansion valve side of the evaporator coil. A large temperature difference between the left hand and right hand supply air sensors indicates a possible evaporator restriction or incorrect superheat. • If Low pressure switch is mounted - Check low pressure cutout switch wiring. - Measure the voltage across the switch, located at J9 pin 6 and pin 5. - Switch closed (normal) voltage is 0VDC. - Switch open (LPCO) voltage is approx. 12VDC. - Replace switch. • If pressure transducer is mounted, - Measure the transducer supply voltage at J1 pin 8 related to J1 pin 9 (GND). Expects to be approx. 12VDC. - Measure the transducer output voltage at J1 pin 7 related to J1 pin 9 (GND). Expects to be above 0,5VDC (0BarR = 0,8VDC)

Alarm #0032
Condenser Coil Temperature Sensor Open Circuit

Description	Corrective Action
• When the sensor circuit resistance is above 1785Ω. • Indicates: - Open circuit. - Defective or wrong sensor. - Defective wiring. - Defective controller.	• Check for damaged sensor wires. • Check for sensor connections at controller. • The sensor is a pt1000 – 2 wire sensor, connected to the MP-4000 at connector J3 pin 7 and 8. CM-4000 upper left connector J3, 17 pin wide, pin number 1 is the right pin, seen at the backside of the controller. • The 2 sensor wires can be switched without affecting the measurement. • Disconnect the sensor, use an Ohm (Ω) measuring device, measure the electrical resistance between the two sensor wires. The sensor can't be examined without disconnecting it. The electrical resistance towards chassis must be above meg ohm (MΩ) range. • The sensor is a pt1000 – positive temperature coefficient, which means that the electrical resistance of the sensor increases with temperature. The sensor is defined to be 1000Ω@ 0°C. Normal condition measuring with disconnected sensor is 960Ω@-10°C, 1000Ω@0°C,1039Ω@+10°C, 1058Ω@+15°C, 1078Ω@+20°C. The valid measuring limit for this pt1000 sensor is - 100°C(602Ω) +200°C(approx 1758Ω).

Alarm #0033
Condenser Coil Temperature Sensor Short Circuit

Description	Corrective Action
• When the sensor circuit resistance is below 602Ω. • Indicates: - Short circuit. - Defective or wrong sensor. - Defective wiring. - Defective controller.	• Check for damaged sensor wires. • Check for sensor connections at controller. • The sensor is a pt1000 – 2 wire sensor, connected to the MP-4000 at connector J3 pin 7 and 8. CM-4000 upper left connector J3, 17 pin wide, pin number 1 is the right pin, seen at the backside of the controller. • The 2 sensor wires can be switched without affecting the measurement. • Disconnect the sensor, use an Ohm (Ω) measuring device, measure the electrical resistance between the two sensor wires. The sensor can't be examined without disconnecting it. The electrical resistance towards chassis must be above meg ohm (MΩ) range. • The sensor is a pt1000 – positive temperature coefficient, which means that the electrical resistance of the sensor increases with temperature. The sensor is defined to be 1000Ω@ 0°C. Normal condition measuring with disconnected sensor is 960Ω@-10°C, 1000Ω@0°C, 1039Ω@+10°C, 1058Ω@+15°C, 1078Ω@+20°C. The valid measuring limit for this pt1000 sensor is - 100°C(602Ω) +200°C(approx 1758Ω).

Alarm #0034
Ambient Air Temperature Sensor Open Circuit

Description	Corrective Action
• When the sensor circuit resistance is above 1785Ω. • Indicates: - Open circuit. - Defective or wrong sensor. - Defective wiring. - Defective controller.	• Check for damaged sensor wires. • Check for sensor connections at controller. • The sensor is a pt1000 – 2 wire sensor, connected to the MP-4000 at connector J3 pin 9 and 10. CM-4000 upper left connector J3, 17 pin wide, pin number 1 is the right pin, seen at the backside of the controller. • The 2 sensor wires can be switched without affecting the measurement. • Disconnect the sensor, use an Ohm (Ω) measuring device, measure the electrical resistance between the two sensor wires. The sensor can't be examined without disconnecting it. The electrical resistance towards chassis must be above meg ohm (MΩ) range. • The sensor is a pt1000 – positive temperature coefficient, which means that the electrical resistance of the sensor increases with temperature. The sensor is defined to be 1000Ω@ 0°C. Normal condition measuring with disconnected sensor is 960Ω@-10°C, 1000Ω@0°C,1039Ω@+10°C, 1058Ω@+15°C, 1078Ω@+20°C. The valid measuring limit for this pt1000 sensor is - 100°C(602Ω) +200°C(approx 1758Ω).

Alarm #0035
Ambient Air Temperature Sensor Short Circuit

Description	Corrective Action
• When the sensor circuit resistance is below 602Ω. • Indicates: - Short circuit. - Defective or wrong sensor. - Defective wiring. - Defective controller.	• Check for damaged sensor wires. • Check for sensor connections at controller. • The sensor is a pt1000 – 2 wire sensor, connected to the MP-4000 at connector J3 pin 9 and 10. CM-4000 upper left connector J3, 17 pin wide, pin number 1 is the right pin, seen at the backside of the controller. • The 2 sensor wires can be switched without affecting the measurement. • Disconnect the sensor, use an Ohm (Ω) measuring device, measure the electrical resistance between the two sensor wires. The sensor can't be examined without disconnecting it. The electrical resistance towards chassis must be above meg ohm (MΩ) range. • The sensor is a pt1000 – positive temperature coefficient, which means that the electrical resistance of the sensor increases with temperature. The sensor is defined to be 1000Ω@ 0°C. Normal condition measuring with disconnected sensor is 960Ω@-10°C, 1000Ω@0°C,1039Ω@+10°C, 1058Ω@+15°C, 1078Ω@+20°C. The valid measuring limit for this pt1000 sensor is - 100°C(602Ω) +200°C(approx 1758Ω).

Alarm #0043 Return Air Temperature Too High	
Description	Corrective Action
- Occurs during defrost. - With de humidify operation; during defrost the return air temperature increases above 38 °C (100 F). - Indicates: - Defective return or evaporator coil sensor. - Return and evaporator coil sensor connections are switched.	- Check for sensor alarm codes. - Check supply and return sensor connections and locations.

Alarm #0044 Return Air Temperature Too Low	
Description	Corrective Action
- Occurs during Normal Run only. - Only active with the surveillance active (OOCL option) - During de humidify operation or if ambient air temperature is below set point: - If return air temperature is below set point -3C. - Else (other operation range): - If return air temperature is below set point -1C. - The alarm state has to be present for 15minutes before the alarm is set. - Indicates: - Container/side panels defective, damaged or leaking.	- Using DATA menu to evaluate sensors. - Use PROBE TEST to help determine the problem. - Replace sensor.

Alarm #0051
Power Line Voltage Too Low

Description	Corrective Action
• Shutdown Alarm. • Occurs if line voltage has been below 330VAC and is below 340 volts for 30 minutes. • During the 30 minutes and until voltage gets back above 340VAC the compressor is stopped, for protecting the unit. • Indicates: - Poor power supply.	• Using DATA menu to evaluate the power line quality. • Refer to the electrical specifications in the Specifications Section for correct power requirements.

Alarm #0052
Probe Error

Description	Corrective Action
• Occurs during pretrip (PTI) test or probe test in Chilled mode. • Temperature difference between supply and return air is above 1,5C and the system is capable of pinpointing which probe is failing. • Temperature difference between supply and return air and evaporator coil is above 1,5C and the system is capable of pinpointing which probe is failing. • Indicates: - Sensor error. - Sensor misplacement.	• Using MANUAL FUNCTION TEST, ventilate with evaporator fan high speed and evaluate the readings. • Check sensor connections. • Replace sensor. • Check sensor.

Alarm #0053 High Pressure Switch Off Error	
Description	Corrective Action
- Occurs during pretrip (PTI) test only. - Compressor does not stop during high pressure cutout switch test. - Indicates: - Faulty compressor contactor or control circuit. - Low refrigerant charge. - Defective high pressure cutout switch. - Strong winds causing cooling of condenser coil in low ambient conditions.	- Check discharge and suction pressure gauge readings and check refrigerant charge. - Enter Manual Function Test menu. - Start the following components together: compressor 100 percent, compressor and evaporator fans (high). Discharge pressure should increase and compressor should stop at 2250 kPa, 22.5 bar, 326 psig (high pressure cutout switch opens).

Alarm #0054 High Pressure Switch On Error	
Description	Corrective Action
- Occurs during pretrip (PTI) test only. - Compressor does not start within normal time during high pressure cutout switch test. - Indicates: - High pressure cutout switch did not respond to pressure change within 5 seconds. - Air in refrigeration system. - Defective high pressure cutout switch.	- Check discharge and suction pressure gauge readings. - Enter Manual Function Test menu. - Start the following components together: compressor 100 percent, compressor and evaporator fans (high). Discharge pressure should increase and compressor should stop at 2250 kPa, 22.5 bar, 326 psig (high pressure cutout switch opens). - Then start condenser fan. Discharge pressure must drop quickly (10 to 20 seconds) to 1550 kPa, 15.5 bar, 225 psig and compressor should start (switch closes)

Alarm #0056 Compressor Temperature Too High	
Description	Corrective Action
• Shutdown Alarm. • Compressor discharge line temperature is above 148 °C (298 F). Compressor stopped until discharge line temperature decreases to normal. • Indicates: - Air in refrigeration system. - Low refrigerant charge. - Defective compressor. - Defective vapor injection.	• Operate unit on Cool and check discharge and suction pressure gauge readings. • Enter Manual Function Test menu and test (operate) Vapor Injection Valve to determine if valve opens (energizes). • Check compressor discharge sensor resistance. Resistance must be approx. 86,000 ohms at 25 °C (77 F). • Check discharge line temperature with a separate electronic thermometer and compare to "HIGH PR TEMP" shown in the Data menu of controller. NOTE: Unit will operate normally without compressor sensor. However, controller compressor high temperature protection is not active.

Alarm #0057 FAE Device Error	
Description	Corrective Action
• Occurs during pretrip testing if the expected door endpoints can't be reached. • Occurs during normal operation - If the AFAM+ module isn't detected. - During door position calibration the expected door endpoints feedback can't be reached. - During pulsing movement the expected door end points feedback can't be reached. • Indicates: - Stocked air vent. door motor. - Failing or missing AFAM+ module.	• Inspect AFAM+ module connection to the controller. • Using STATES MENU / EXPANSION MODULE to inspect the observed presence and readings of the AFAM+ module. - From backside left bay is bay 1 - From backside right bay is bay 2 If the module is not found use the tester to decide the problem. • Inspect wiring from AFAM+ motor to AFAM+ module. • Using MANUAL FUNCTION TEST move and Inspect air vent door movement. • Inspect air vent. • Replace AFAM+ motor.

Alarm #0058 Phase Sensor Error	
Description	Corrective Action
- Occurs during pretrip (PTI) or function test only. - During Phase Sensor Test, while direction is reversed, the condenser fan and compressor is tested. - If the current consumption of the condenser fan is below 0,5A on each phase. - If the current consumption of the compressor is below 2,0A on each phase. - Indicates: - Defective phase relay. - Defective power module.	Start a Manual Function Test. With reverse phase direction selected, check the condenser fan runs reversed direction and the compressor is activated and makes loud noise. Allow only for short time activation max. 5 sec.

Alarm #0059 Delta Current Error	
Description	Corrective Action
100% ampere difference between current phases, max reading must be above 1,5A. - The alarm is protected by a timer which demand the state to be present for 3 minutes before the alarm is set. - Indicates: - Open connection on one phase of power supply to a motor or heater element. - Blown fuse.	- Enter Manual Function Test menu and test (operate) each 3-phase component to locate the defective connection. - Check fuses.

Alarm #0060
Humidity Sensor Error

Description	Corrective Action
- Occurs during pretrip (PTI) test. - Relative humidity reading is less than 15%. - Indicates: - Sensor disconnected. - Wrong controller configuration, sensor might be disconnected or removed. - Defective sensor.	- Check sensor connections. - Check controller configuration menu for correct humidity setting. - Replace sensor.

Alarm #0065
CO2 Too High

Description	Corrective Action
- Occurs during Normal Run with AFAM+ DEMAND. - If the Co2 level has been within 0.6% of set point for at least one hour and then gets 1.6% above set point. - Indicates: - Need of ventilation with fresh air - Stocked air vent door. - Air Vent. Motor defect.	- Using Manual Function Test - Check air vent door functionality. - Check wiring.

Alarm #0066
CO2 Too Low

Description	Corrective Action
- Occurs during Normal Run with AFAM+ DEMAND. - If the Co2 level has been within 0.6% of set point for one hour and then gets 1.6% below set point. - Indicates: - Not intended ventilation with fresh air - Stocked air vent door. - Air Vent. Motor defect. - Container doors open.	- Using Manual Function Test - Check air vent door functionality. - Check wiring. - Check container doors.

Alarm #0068 Gas Analyzer Error	
Description	Corrective Action
- Occurs during pretrip (PTI) test only. - With O2 ON, If Both O2 and CO2 sensor reading is not ready and valid within 10 minutes. - Occurs during normal run with AFAM+ DEMAND - If the sensor is capable of producing valid reading for 10 minutes. - Indicates: - Failing sensor, not capable of heating up or create conditions for valid reading.	- Redo AFAM+ PTI. - Replace sensor.

Alarm #0069 Gas Analyzer Calibration Error	
Description	Corrective Action
- Occurs during AFAM+ PTI test. - After ventilation if the CO2 reading is below 0% or above 2%. - Occurs during normal run with AFAM+ DEMAND - With O2 ON, if (CO2+O2) is not within 10% to 30%. - With O2 OFF, if CO2 is above 25%. - Indicates - Sensor lost the calibration. - Failing sensor.	- Redo the test. - Replace sensor.

Alarm #0070 O2 Sensor Error	
Description	Corrective Action
- Occurs during pretrip (PTI) test only. - If the sensor reading is not ready and valid within 10 minutes. - Indicates: - Failing sensor, not capable of heating up or create conditions for valid reading.	- Redo the test. - Replace sensor.

Alarm #0071 CO2 Sensor Error	
Description	Corrective Action
- Occurs during pretrip (PTI) test only. - If the sensor reading is not ready and valid within 10 minutes. - Indicates: - Failing sensor, not capable of heating up or create conditions for valid reading.	- Redo the test. - Replace sensor.

Alarm #0098

Compressor temperature Sensor Short Circuit

Description	Corrective Action
- When the sensor circuit resistance is below 550Ω. - Indicates: - Short circuit. - Defective or wrong sensor. - Defective wiring. - Defective controller.	- Check for damaged sensor wires. - Check for sensor connections at controller. - The compressor temperature sensor is a NTC – 2 wire sensor. The sensor is located/connected to the MP-4000 at connector J3 pin 13 and 14. CM-4000 upper left connector J3, 17 pin wide, pin number 1 is the right pin, seen at the backside of the controller. - The 2 sensor wires can be switched without affecting the measurement. - Disconnect the sensor, use an Ohm (Ω) measuring device, measure the electrical resistance between the two sensor wires. - The sensor can't be examined without disconnecting it. - The electrical resistance towards chassis must be above meg ohm (MΩ) range. - The sensor is a NTC thermistor type - negative temperature coefficient, which in this case means that the resistance of the sensor decreases with temperature. - The sensor is defined to be 86000Ω@ 25°C. - Normal condition measuring with disconnected sensor is 475kΩ@-10°C, 280kΩ@0°C, 171kΩ@+10°C, 135kΩ@+15°C, 107kΩ@+20°C. - The valid measuring limit for this sensor is - 25°C(approx 1MΩ) +185°C(approx 550Ω). Note: OPEN circuit state is not reasonable since open indicates high electrical resistance which with this type of sensor is possible at very low temperature. Instead - 30°C is shown as temperature. The needed protection compressor temperature vice is at the high temperature end of the scale.

Alarm #0119 Digital Valve Error

Description	Corrective Action
- Occurs during pretrip (PTI) test only. - Compressor Current consumption not correct for valve position.	- Using Manual Function Test, without compressor and fans active check the function of the valve by observing the sound or feel of the valve while activating/deactivating. - Using Manual Function Test, with compressor and fans active check the function of the valve. - The current consumption during NOT energized valve must be higher than during energized position. - With Condenser coil temperature above 35C the expected increase is min 0,9A and below 35C expected limit is 1,5A.

Alarm #0120 Suction Pressure Sensor Error

Description	Corrective Action
- Occurs during Normal Run if the sensor is detected to be out of range, open or short circuit. - Occurs during pretrip (PTI) test if the sensor readings do not act correct during compressor activity. - Expected to decrease 0,15Bar from stopped to compressor running loaded. - Indicates: - Wrong location of the sensor. - Sensor failure.	- Using DATA menu evaluate sensor readings. - Check wiring to be correct and connected. - Check J1 plug is plugged into MRB. - Check voltage at J1 pin7 to be 0.5 – 4.5 VDC. - Replace sensor.

Alarm #0121 Discharge Pressure Sensor Error	
Description	Corrective Action
- Occurs during Normal Run if the sensor is detected to be out of range, open or short circuit. - Occurs during pretrip (PTI) test if the sensor readings do not act correct during compressor activity. - Expected to increase 0,15Bar from stopped to compressor running loaded. - Indicates: - Wrong location of the sensor. - Sensor failure.	- Using DATA menu evaluate sensor readings. - Check wiring to be correct and connected. - Check J1 plug is plugged into MRB. - Check voltage at J1 pin4 to be 0.5 – 4.5 VDC. - Replace sensor.

Alarm #0122 O2 Sensor Calibration Error	
Description	Corrective Action
- Occurs during AFAM+ PTI test. - Occurs only if the setting O2 SENSOR USAGE is ON. - After ventilation if the O2 reading is below 17% or above 25%. - Indicates - Sensor lost the calibration. - Failing sensor.	- Open doors and ventilate container. - Redo the test. - Recalibrate sensor. - Replace the sensor.

Alarm #0123 Data logger Battery Error	
Description	Corrective Action
- In cold ambient if the battery heater (battery internal) is not capable of heating up the battery, ready for charging within 2 hours. - If the battery is not connected. - If the battery voltage is below 3,0VDC.	- Using DATA menu to determine the state of the battery. Evaluate temperature and voltage. - Check the battery physically, dismount and examine wires and the connection to the controller. - Replace battery.

Alarm #0124 Cold Treatment Restart

Description	Corrective Action
- Occurs during Normal Run and only with cold Treatment active. - Only active with the surveillance active (OOCL option) - Indicates: - Cold treatment period is restarted due to temperatures. - Problem with cooling process, - Too long duration of power off.	Unit will automatically restart the treatment period.

Alarm #0127 General Unit Error

Description	Corrective Action
- The surveillance has determined that the unit is not capable of continue running, and has shut down. - The reason is displayed at the controller main screen, and is stated at the event next to the alarm event. - Known reason to the shutdown state is: "SET POINT OUT OF RANGE" "VOLTAGE OUT OF RANGE" "POWER LINE PHASE ERROR" "REGULATION PROBE ERROR" "COMPRESSOR TEMPERATURE HIGH"	"SET POINT OUT OF RANGE" - The temperature set point is outside valid operation range. +30°C to -40°C (+35°C with extended range). - Check configurations and settings on the controller. "VOLTAGE OUT OF RANGE" - The measured voltage is below 330VAC. - Check power line voltage while loaded. "POWER LINE PHASE ERROR" - The phase detection system detects phase error or not capable of securing the correct rotation. - Check power line voltage and quality. "REGULATION PROBE ERROR" - If supply and return air temperature sensor and evaporator coil temperature sensors ALL indicate OPEN or SHORT circuit, the software is not capable of determine a reasonable action related to the cargo. - Following steps related to the sensor alarms. "COMPRESSOR TEMPERATURE HIGH" - The compressor temperature is measured to be above 148°C. The state will stay until compressor temperature is measured to be below 132°C.

	• Check refrigerant level and flow through the cooling circuit.
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Alarm #0128 Supply Air Temperature Sensor Error	
Description	Corrective Action
• Occurs during pretrip (PTI) test and probe test only. • After ventilation with the evaporator fans. • If the supply and return air temperature sensor differs more than 1,5C and the return air temperature is within 1,5C of evaporator coil temperature. • If evaporator coil temperature sensor is failing, if the supply and return air temperature sensors differs more than 1,5C. Both alarm 129 and 128 will be set. • Indicates: - Failing sensors. - Misplaced sensors. - Failing controller.	• Use the DATA menu to detect the failing sensor. • Replace sensors. • Use the tester to determine the problem.

Alarm #0129 Return Air Temperature Sensor Error	
Description	Corrective Action
• Occurs during pretrip (PTI) test and probe test only. • After ventilation with the evaporator fans. • If the supply and return air temperature sensor differs more than 1,5C and the supply air temperature is within 1,5C of evaporator coil temperature. • If evaporator coil temperature sensor is failing, if the supply and return air temperature sensors differs more than 1,5C. Both alarm 129 and 128 will be set. • Indicates: - Failing sensors. - Misplaced sensors. - Failing controller.	• Use the DATA menu to detect the failing sensor. • Replace sensors. • Use the tester to determine the problem.

Alarm #0130 Evaporator Coil Temperature Sensor Error	
Description	Corrective Action
- Occurs during pretrip (PTI) test and probe test only. - After ventilation with the evaporator fans. - If the evaporator coil temperature differs more than 1,5C from the mean value of supply and return air temperature. - Indicates: - Failing sensors. - Misplaced sensors. - Failing controller.	- Use the DATA menu to detect the failing sensor. - Replace sensors. - Use the tester to determine the problem.

Alarm #0131 Ambient Air – Condenser Coil Temperature Sensor Error	
Description	Corrective Action
- Occurs during pretrip (PTI) test and probe test only. - After ventilation with the condenser fan. - If the ambient air and condenser coil temperature sensor readings differs more than 2.5C. - Indicates: - Failing sensors. - Misplaced sensors. - Failing controller.	- Use the DATA menu to detect the failing sensor. - Replace sensors. - Use the tester to determine the problem.

Alarm #0132 Power Module Sensor Error	
Description	Corrective Action
• The surveillance continually evaluates the measurements reported by the power module. • The surveillance includes a timer with a timeout at 60 seconds before the alarm is set. • Indicates: - Power module located readings outside allowed range.	• Use DATA menu to determine the failing reading. • The accepted limit for - Line AC voltage is 180 to 700VAC. - Power line current is 0mA to 32A. - Radiator temperature is -100C to 200C. • Check for latest software revision. • Use tester to determine the problem.

Alarm #0133 Power Module Network Error	
Description	Corrective Action
• The surveillance has not received valid status communication from the power module for 10 seconds. • Indicates: - Communication problem.	• Check connection between controller and power module. • Use tester to determine the problem.

Alarm #0134 Controller Error	
Description	Corrective Action
• The surveillance has determined the state “controller internal error”. • Indicates: - The controller is failing one way or another.	• Use the tester to determine the problem.

Alarm #0135 Power Module Error	
Description	Corrective Action
- The surveillance has determined the state "Power module error". - Indicates: - The power module is failing one way or another.	Use the tester to determine the problem.

Alarm #0136 Controller Transducer Circuit Error	
Description	Corrective Action
The controller is not capable of generating the expected voltage for the 12V transducer sensors, (suction pressure and discharge pressure, AVL and humidity sensor).	- Replace Data logger Battery. - Use the tester to determine the problem.

Alarm #0137 Sensor System Overload	
Description	Corrective Action
- The controller sensor measurement is overloaded. - This situation will probably introduce wrong readings at other sensors than the one introducing the overload. - Indicates: - Not intended voltage is introduced at one of the sensor inputs. - Transducer, connection or cabling with voltage supply for the sensor might short circuit this voltage supply onto the measuring input.	- Sensor input which might initiate the problem: - At connector J3: - Humidity sensor (4-20mA type) pin 15-16. - At connector J1: - AVL position pin 1-3. - Discharge pressure pin 4-6. - Suction pressure pin 7-9. - At least one of the sensors circuits holds a short between sensor voltage and sensor signal. - Problem might be located anywhere from the connection to the sensor itself. - Action: - Disconnect sensors and look for a non intended short between sensor voltage and the sensor line. - The sensor with the problem might show up with its own alarm.

Alarm #0138 AVL Sensor Error	
Description	Corrective Action
- Occurs if the sensor is detected to be out of range, open or short circuit. - Indicates: - Sensor failure.	- Using DATA menu evaluate sensor readings. - Check wiring to be correct and connected. - Check J1 plug is plugged and connected to controller. - Check voltage at J1 pin 1 to be 0.5 – 4.5 VDC. - Check supply voltage at J1 pin 3 (GND) to pin 2 to be approximately 12.6VDC. - Replace sensor.

Alarm #0139 Internal File Handling Error	
Description	Corrective Action
- Occurs if the read or write process of nonvolatile information (ie. Configuration and settings) fails. - Indicates: - Internal file read or write failure.	Replace controller.

Alarm #0140 Evaporator section too hot	
Description	Corrective Action
- Occurs if supply air, return air or evaporator coil temperature reads temperature at or above 60C. - Indicates: - Failing heater circuit, hanging output. - Failing evaporator fan.	- Observe temperature readings to locate the problem. - Use manual function test to determine the failing component. - Use the tester to determine the problem.